

PROJECT NUMBER: 1620
PROJECT TITLE: Electrophysiological Studies
PROJECT LEADER: F. P. Gullotta
WRITTEN BY: C. S. Hayes
PERIOD COVERED: May, 1990

I. PATTERN-REVERSAL EVOKED POTENTIALS (PREPs)

A. Objective: To objectively and reliably evaluate human responses to cigarettes.

B. Results:

1. PREP - Impact Study

Work on this study continues. The objective of the study is to compare the electrophysiological and subjective effects of ART-blend cigarettes made from varying proportions of extracted and unextracted fillers. To date, the study is 80% completed.¹

2. PREP - Nicotine/Menthol Interaction Study

Previous work comparing cigarettes made from extracted and unextracted fillers has shown that menthol increases impact in the former and decreases impact in the latter. Most importantly, a statistically significant association between impact scores and PREP $P_1 - N_2$ amplitudes was demonstrated. Specifically, higher impact scores were associated with larger increases in $P_1 - N_2$ amplitudes.² In order to further investigate menthol/nicotine interactions on perceived impact, a PREP study has been initiated to determine whether objective correlates of anticipated nicotine/menthol interactions can be obtained.

The PREP study is employing factorial combinations of four levels of menthol (0.00, 0.04, 0.08 and 0.16 mg/puff) and three levels of nicotine (0.08, 0.51 and 1.10 mg/puff) on ART cigarettes. Thus, twelve experimental cigarettes with various combinations of menthol and nicotine are being tested. PREPs are being recorded in twenty R&D smokers before and after the smoking of each of the twelve cigarettes. Additionally, at the end of each experimental session, subjects are required to complete a ballot evaluating the cigarette that was smoked. To date, testing has been initiated and should be completed by early September.

C. **Plans:** Complete the testing of twenty subjects with each of six ART models from the impact study and analyze the data. Continue testing of twenty subjects with each of twelve ART models from the nicotine/interaction study.

D. **References:**

1. Martin, B. R. Notebook No. 8931, pp. 115-159.
2. Gullotta, F. P., Hayes, C. S. and Martin, B. R. Phase I ART Study. Memo to H. L. Spielberg; 1990 March 29.